

CLAIMS

1. A method for mitigating the effect of interference between a first
2 base station and a second base station, said first base station and second
base stations both sharing a same primary synchronization code, the method
4 comprising the steps of:
generating a primary synchronization channel having said primary
6 synchronization code;
rotating said primary synchronization channel in phase according to a
8 phase rotation sequence; and
receiving said primary synchronization channel.
2. The method of claim 1 wherein said phase rotation sequence is
2 pseudorandom.
3. The method of claim 2 wherein said phase rotation sequence
2 includes changing phase once per slot.
4. The method of claim 2 wherein said phase rotation sequence
2 includes changing phase once per frame.
5. The method of claim 3 wherein said phase rotation sequence
2 includes changing phase by integer multiples of $\pi/2$ radians.
6. The method of claim 4 wherein said phase rotation sequence
2 includes changing phase by integer multiples of $\pi/2$ radians.
7. The method of claim 2 further comprising the step of generating a
2 secondary synchronization channel having a secondary synchronization code,
said phase rotation sequence being based at least in part on said secondary
4 synchronization code.
8. The method of claim 7 further comprising the step of:

- 2 combining said primary synchronization channel and said secondary
synchronization channel to produce a synchronization channel;
4 wherein said step of rotating said primary synchronization channel in
phase comprises rotating said primary synchronization channel before said
6 combining step.

9. The method of claim 7 further comprising the step of:
2 combining said primary synchronization channel and said secondary
synchronization channel to produce a synchronization channel;
4 wherein said step of rotating said primary synchronization channel in
phase comprises rotating said synchronization channel in phase.

10. The method of claim 7 further comprising the steps of:
2 generating a dedicated channel;
combining said primary synchronization channel and said secondary
4 synchronization channel to produce a synchronization channel; and
combining said synchronization channel and said dedicated channel to
6 produce a downlink channel;
wherein said step of rotating said primary synchronization channel in
8 phase comprises rotating said downlink channel in phase.

11. An apparatus for mitigating the effect of interference between a
2 first base station and a second base station, said first base station and second
base stations both sharing a same primary synchronization code, the apparatus
4 comprising:
a primary synchronization channel generator for generating a primary
6 synchronization channel having said primary synchronization code;
a phase rotator, coupled to said primary synchronization channel
8 generator, for rotating said primary synchronization channel in phase according
to a phase rotation sequence; and
10 a receiver for receiving said primary synchronization channel.

12. The apparatus of claim 11 wherein said phase rotation sequence
2 is pseudorandom.

13. The apparatus of claim 12 wherein said phase rotation sequence
2 includes changing phase once per slot.

14. The apparatus of claim 12 wherein said phase rotation sequence
2 includes changing phase once per frame.

15. The apparatus of claim 13 wherein said phase rotation sequence
2 includes changing phase by integer multiples of $\pi/2$ radians.

16. The apparatus of claim 14 wherein said phase rotation sequence
2 includes changing phase by integer multiples of $\pi/2$ radians.

17. The apparatus of claim 12 further comprising a secondary
2 synchronization channel generator for generating a secondary synchronization
channel having a secondary synchronization code, said phase rotation
4 sequence being based at least in part on said secondary synchronization code.

18. The apparatus of claim 17 further comprising:
2 a first combiner for combining said primary synchronization channel and
said secondary synchronization channel to produce a synchronization channel;
4 wherein said phase rotator is coupled between an output of said primary
synchronization channel generator and an input of said first combiner.

19. The apparatus of claim 17 further comprising:
2 a first combiner for combining said primary synchronization channel and
said secondary synchronization channel to produce a synchronization channel;
4 wherein said phase rotator is coupled to an output of said first combiner.

20. The apparatus of claim 17 further comprising:
2 a first combiner for combining said primary synchronization channel and
said secondary synchronization channel to produce a synchronization channel;
4 and
a second combiner for combining said synchronization channel and a
6 dedicated channel to produce a downlink channel;

wherein said phase rotator is coupled to an output of said second
8 combiner.